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A taxonomic study on the genus *Japananus* Ball (Hemiptera, Cicadellidae, Deltocephalinae), with description of one new species from China

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Abstract

The paper deals with four species of the genus *Japananus* Ball, 1931 (Hemiptera, Cicadellidae, Deltocephalinae), including one new species from Sichuan Province, China, *Japananus bicurvatus* **sp. nov.** A key is given to distinguish all species of the genus, and illustrations of genitalia are provided. The type specimens of the new species are deposited in the Institute of Entomology, Guizhou University (IEGU).

Keywords

Hemiptera, Deltocephalinae, Scaphytopiini, *Japananus*, new species, taxonomy, China

Introduction

The leafhopper genus *Japananus* (Hemiptera, Cicadellidae, Deltocephalinae, Scaphytopiini), was established by Ball (1931) for a single species, *Platymetopius hyalinus* Osborn, 1900. Later, Oman (1931) placed *Platymetopius cinctus* Matsumura as a junior synonym of *Platymetopius hyalinus* and Ball (1931) proposed the new combination *Japananus aceri* (Matsumura). Recently Viraktamath and Anantha Murthy (1999) described a third species, *Japananus nepalicus*, from Nepal.

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In this paper, a new species is described and illustrated from Sichuan Province, China. The type specimens of new species are deposited in the Institute of Entomology, Guizhou University, Guiyang, Guizhou (IEGU). The genus *Japananus* now contains four species. A key is given to separate all species.

Japananus Ball

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Japananus Ball, 1931: 218. Type species: *Platymetopius hyalinus* Osborn, 1900.

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urn:lsid:zoobank.org:pub:6B44547E-8C0E-4915-9832-ABDD969D844A

Description. Light green species, often with transverse brown bands on hyaline fore wings. Head conically produced in front, narrower than pronotum. Vertex medially depressed, transition between face and vertex angular, carinate, at least apically, disc shagreened. Face shagreened, frontoclypeus widened posteriorly, about twice as wide at bases of antennae as at apex, coronal sulci laterally divergent abruptly slightly beyond bases of antennae. Clypellus widened apically, extending beyond normal curve of genae. Fore wings hyaline, 3.0-3.4 times as long as wide, claval veins either fused in middle or connected by a cross vein; outer anteapical cell quadrangular, smaller than median anteapical cell, costal area without reflexed veins. Hind basitarsus with four platellae.

Male pygophore slightly longer than high, devoid of processes, with a few stout setae along ventro-caudal margin, ventral margin rather expanded. Tenth segment short, without processes. Subgenital plate with a caudal attenuated process, without stout setae. Style slender, elongate, with short finger-like apophysis, apex curved laterally. Connective slender, elongate, Y-shaped. Aedeagus with paired shafts, U-shaped in ventral view, each shaft with a subapical process. Gonopore opening adjacent base of subapical processes.

Size. Length (including tegmen): 4.3-5.5 mm.

Remarks. *Japananus* resembles *Afrascius*, Linnavuori, 1969 from the Afrotropical region. Both share a rather modified Y-shaped connective and similar subapical process on the paired shafts. However, *Japananus* lacks the anal collar process possessed by *Afrascius*, and the subgenital plates in *Japananus* have a caudal attenuated process while *Afrascius* has caudally truncate subgenital plates (Viraktamath and Anantha Murthy, 1999).

Distribution. Australian Region, Nearctic Region, Palaearctic Region, Oriental Region.

Key to species (♂) of *Japananus*

1. Subapical process of aedeagal shafts forked (Fig. 3) ..... *nepalicus*
– Subapical process of aedeagal shafts not forked (Figs 1, 2, 8, 9)..... 2
2. Subapical process of aedeagal shafts straight and robust, with apices directed mediad (Fig. 2) ..... *aceri*
– Subapical process of aedeagal shafts sinuate and delicate (Figs 1, 8, 9)..... 3
3. Apices of aedeagal shafts strongly developed, straight (Fig. 1)..... *hyalinus*
– Apices of aedeagal shafts weakly developed, curved (Figs 8, 9).... *bicurvatus* sp. nov.

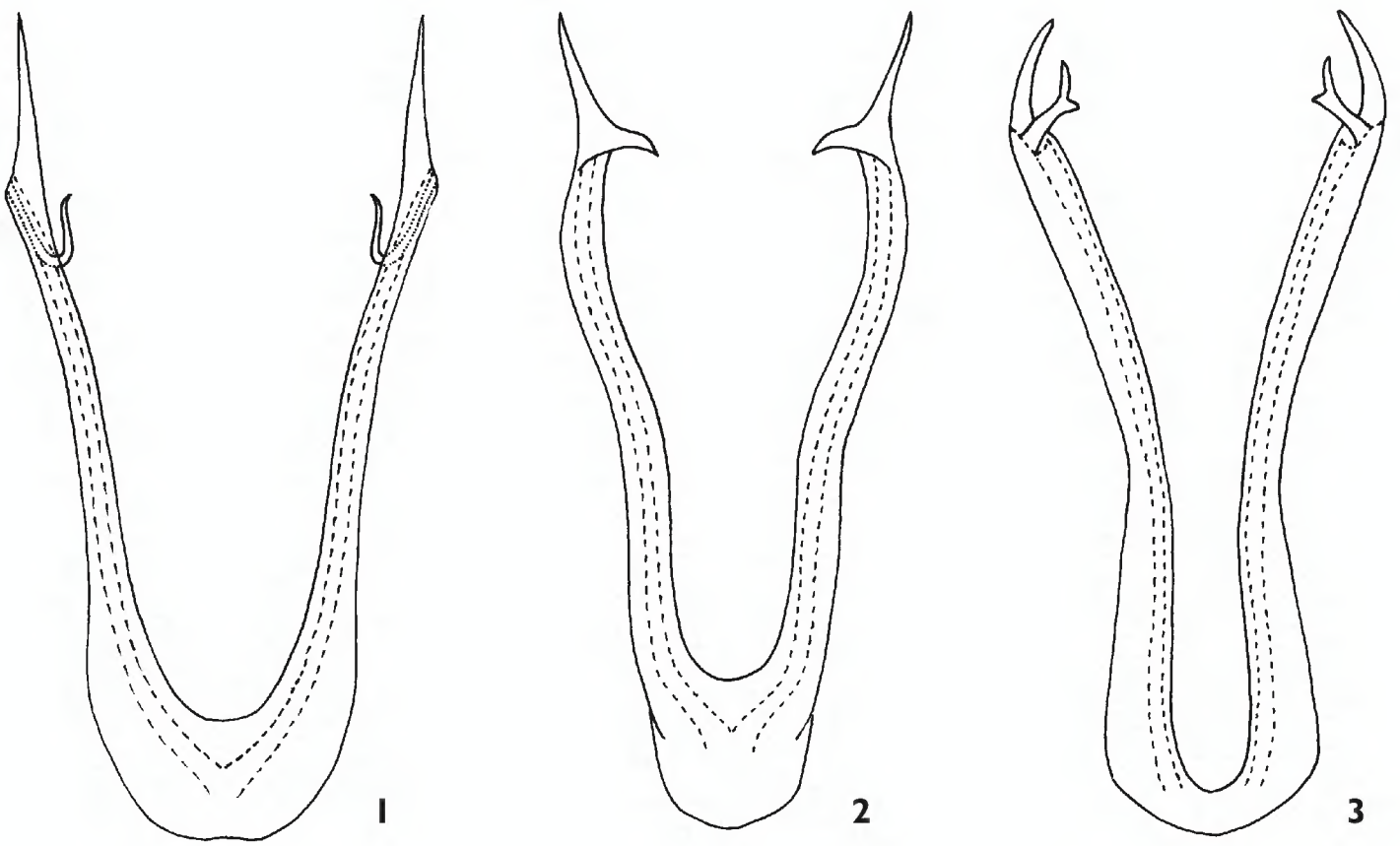
***Japananus hyalinus* (Osborn)**
Platymetopius hyalinus Osborn, 1900: 501.
Platymetopius cinctus Matsumura, 1914: 215, synonymized by Oman 1931: 430.
Japananus hyalinus (Osborn), Ball 1931: 218.
Fig. 1

Distribution. Japan, China, India, Korea, Australia, Columbia, NSW, USA, Hokkaido, Honshu, Tokyo, Satsuma, New Zealand, Europe, Transcaucasia.

Material examined. China: 4♂♂,3♀♀, Guizhou Prov., Guiyang City, Huaxi, 2 June 2008, coll. Jichun Xing (IEGU); 1♂, Liaoning Prov., Dalian City, Ganjingzi Park, 9 August 2008, coll. Lin Ni (IEGU).

Discussion. The distribution of this species in the Oriental Region, Australian Region, Nearctic Region and Palaearctic Region. This species, first described from the USA (Osborn, 1900), is apparently native to Japan (Sanders and DeLong, 1920), from which it was introduced to North America with nursery stock of Japanese maples. It was subsequently (Matsumura, 1914) also described from Japan. It's a known host plants are maples, other plants have not collected this specimen. This species in western Europe seems to be confined to parks where 'Japanese maples' (*Acer palmatum*) are planted. The distribution of this species may be related to its host plants.

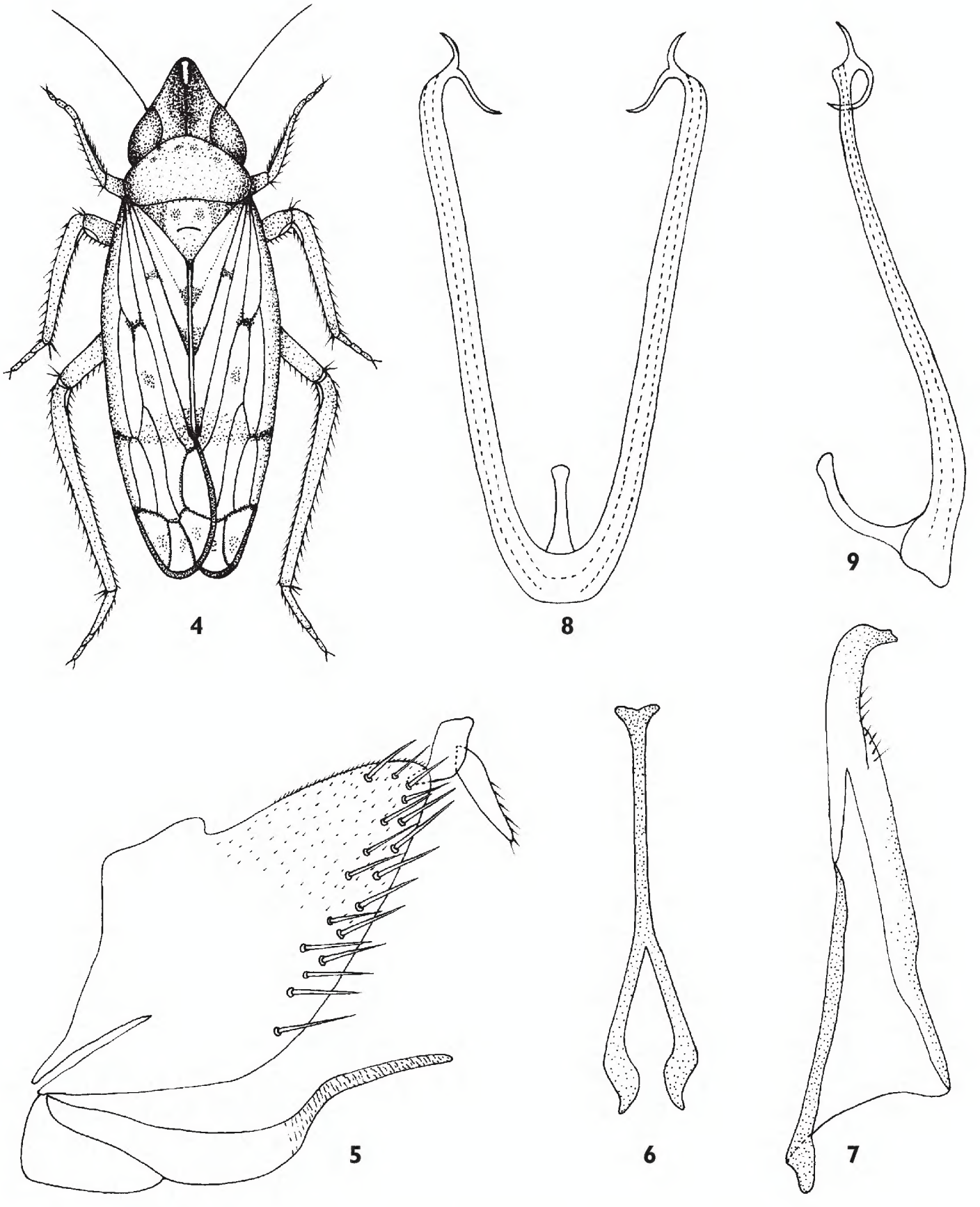
Known hosts. Maple, Aceraceae (*Acer palmatum*, *Acer buergerianum*, *Acer truncatum*).



Figs 1-3. Aedeagus of *Japananus* species, ventral view. 1. ***Japananus hyalinus*** (Osborn); 2. ***Japananus aceri*** (Matsumura) (after Anufriev and Emeljanov, 1988); 3. ***Japananus nepalicus*** Viraktamath and Anantha Murthy (after Viraktamath and Anantha Murthy, 1999).

***Japananus aceri* (Matsumura)**
Platymetopius aceri Matsumura, 1914: 216.
Japananus aceri (Matsumura), Ball 1931: 218.
Fig. 2

Distribution. Japan, Korea, China.
Known hosts. Maple.



Figs 4-9. ***Japananus bicurvatus* sp. nov.** 4. Adult, dorsal view; 5. Male pygofer side, Valve and subgenital plate, lateral view; 6. Connective; 7. Style, dorsal view; 8. Aedeagus, ventral view; 9. Aedeagus, lateral view.

Japananus nepalicus Viraktamath & Anantha Murthy

Japananus nepalicus Viraktamath & Anantha Murthy, 1999: 44
Fig. 3

Distribution. Nepal.
Known hosts. Unknown.

Japananus bicurvatus Xing, Dai et Li, new species

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Figs 4-9

Description. Color and external features as in generic description. Male genitalia: pygophore lobe with a few stout setae along ventro-caudal margin (Fig. 5). Valve large, subtriangular Subgenital plate with a caudal attenuated process. Style long, with strongly laterally curved caudal apex of apophysis (Fig. 7). Connective Y-shaped with arms shorter than stem (Fig. 6). Aedeagus shafts U-shaped in ventral view, shafts with a delicate sinuate subapical processes (Figs 8, 9); gonopore apical.

Measurement. Length (including tegmen): ♂, 4.5-4.7 mm; ♀, 4.7-4.9 mm.

Type Material. Holotype ♂, China: Sichuan Prov., Shuimogou (32° 52' N, 105° 59' E), 17 August 2008, coll. Jichun Xing (IEGU). Paratypes: 2♂♂3♀♀, same data as holotype.

Known hosts. *Acer palmatum*.

Remarks. This species is similar to *Japananus hyalinus* (Osborn) but can be distinguished by the the shape of the aedeagal shafts in ventral view and shape of their processes.

Etymology. The species name is derived from the Latin words *bi* and *curvatus*, indicating that the apical and subapical processes of aedeagal shafts are curved.

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